

- 90 -

CLAIMS

1. A recording and reproduction apparatus, comprising:
a reading section for reading first data and second
5 data from an information recording medium;
a first buffer section for temporarily accumulating
the read first data;
a second buffer section for temporarily accumulating
the read second data;
10 a first decoding section for outputting first decoded
data generated by decoding the accumulated first data;
a second decoding section for outputting second
decoded data generated by decoding the accumulated second
data;
15 a first setting section for setting a read finish
point of the first data;
a second setting section for setting a read start
point of the second data; and
a control section for calculating a first time period,
20 from a start point of a seek operation of the reading section
from the read finish point to the read start point until
the first decoding section completes output of the first
decoded data, and a second time period, from the start point
of the seek operation until the second decoded data is allowed
25 to be output by the second decoding section; and comparing
a length of the calculated first time period and a length
of the calculated second time period.
2. A recording and reproduction apparatus according to
30 claim 1, wherein the calculated first time period includes
a time period which is obtained by subtracting a time period,
required for reading data from a read start point of the
first data to the read finish point of the first data, from

- 91 -

a time period obtained by dividing a data amount from the read start point of the first data to the read finish point of the first data by a bit rate corresponding to the first data.

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3. A recording and reproduction apparatus according to claim 1, wherein:

the first data includes a plurality of data portions between a read start point of the first data and the read
10 finish point of the first data,

the plurality of data portions are each associated with a bit rate; and

the calculated first time period includes a time period which is obtained by subtracting a time period,
15 required for reading data from the read start point of the first data to the read finish point of the first data, from a time period which represents a sum of a plurality of time periods, the plurality of time periods being obtained by dividing a data amount of each of the plurality of data portions
20 by a bit rate corresponding to each of the plurality of data portions.

4. A recording and reproduction apparatus according to claim 3, wherein the bit rate associated with an m'th data
25 portion among the plurality of data portions is different from the bit rate associated with an n'th data portion among the plurality of data portions, where m is an integer and n is an integer different from m.

30 5. A recording and reproduction apparatus according to claim 1, wherein:

the first data includes a plurality of data portions between a read start point of the first data to the read

- 92 -

finish point of the first data, and

the calculated first time period includes a time period from when one of the plurality of data portions is input to the first decoding section until the first decoding section outputs decoded data which is generated by decoding the one of the plurality of data portions.

6. A recording and reproduction apparatus according to claim 5, wherein:

the first buffer section includes a track buffer section and a VBV buffer section, and

the calculated first time period includes a time period in which one of the plurality of data portions is accumulated in the VBV buffer section.

7. A recording and reproduction apparatus according to claim 1, wherein:

the first data includes a plurality of data portions from a read start point of the first data to the read finish point of the first data,

each of the plurality data portions is associated with a bit rate,

the first buffer section includes a track buffer section and a VBV buffer section,

where the calculated first time period is T_A , T_A is expressed by

$$T_A = \sum(V(i)/VdV(i)) - \sum(TR(i) + a(i) \times Ts) + TdlyA$$

where:

$V(i)$ is a data amount of an i 'th data portion among the plurality of data portions where i is an integer,

$VdV(i)$ is a bit rate associated with the i 'th data portion,

$TR(i)$ is a time period required for reading the i 'th

- 93 -

data portion,

a(i) is a number of defective ECC blocks present in an area in the information recording medium where the i'th data portion is recorded,

5 Ts is a time period required for skipping one ECC block, and

TdlyA is a time period representing a sum of a time period, in which one of the plurality of data portions is accumulated in the VBV buffer section, and a time period
10 from when the one of the plurality of data portions is input to the first decoding section until the first decoding section outputs decoded data which is generated by decoding the one of the plurality of data portions.

15 8. A recording and reproduction apparatus according to claim 1, wherein the calculated second time period includes:
a time period required for a seek operation of the reading section from the read finish point to the read start point, and

20 a time period from when at least a portion of the second data is input to the second decoding section until the second decoding section outputs decoded data which is generated by decoding the at least a portion of the second data.

25 9. A recording and reproduction apparatus according to claim 8, wherein the calculated second time period includes a time period in which the at least a portion of the second data is accumulated in the second buffer section.

30 10. A recording and reproduction apparatus according to claim 5, wherein the calculated second time period includes:
a time period required for a seek operation of the

- 94 -

reading section from the read finish point to the read start point, and

5 a time period from when at least a portion of the second data is input to the second decoding section until the second decoding section outputs decoded data which is generated by decoding the at least a portion of the second data.

10 11. A recording and reproduction apparatus according to claim 10, wherein the calculated second time period includes a time period in which the at least a portion of the second data is accumulated in the second buffer section.

15 12. A recording and reproduction apparatus according to claim 1, wherein the calculated second time period includes:

a time period required for a seek operation of the reading section from the read finish point to the read start point, and

20 a time period required for pre-decoding processing for obtaining prescribed data which is used for decoding data corresponding to the read start point of the second data.

25 13. A recording and reproduction apparatus according to claim 1, wherein where the calculated second time period is TB, TB is expressed by

$$TB = T_f + T_b + T_{dlyB} + T_{in}$$

where:

30 T_f is a time period required for a seek operation of the reading section from the read finish point to the read start point,

T_b is a time period required for reading data which is readable during a period from the start point of the seek

- 95 -

operation until data corresponding to the read start point is read,

5 TdlyB is a time period representing a sum of a time period, in which at least a portion of the second data is accumulated in the second buffer section, and a time period from when the at least a portion of the second data is input to the second decoding section until the second decoding section outputs decoded data which is generated by decoding the at least a portion of the second data, and

10 Tin is a time period required for pre-decoding processing for obtaining prescribed data which is used for decoding data corresponding to the read start point of the second data.

15 14. A recording and reproduction apparatus according to claim 7, wherein where the calculated second time period is TB, TB is expressed by

$$TB = T_f + T_b + T_{dlyB} + T_{in}$$

where:

20 T_f is a time period required for a seek operation of the reading section from the read finish point to the read start point,

25 T_b is a time period required for reading data which is readable during a period from the start point of the seek operation until the data corresponding to the read start point is read,

30 T_{dlyB} is a time period representing a sum of a time period, in which at least a portion of the second data is accumulated in the second buffer section, and a time period from when the at least a portion of the second data is input to the second decoding section until the second decoding section outputs decoded data which is generated by decoding the at least a portion of the second data, and

- 96 -

T_{in} is a time period required for pre-decoding processing for obtaining prescribed data which is used for decoding data corresponding to the read start point of the second data.

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15. A recording and reproduction apparatus according to claim 1, further comprising a writing section for writing, in the information recording medium, at least one of, at least a portion of the first data and at least a portion of the second data, wherein:

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when determining that the length of the calculated first time period is shorter than the length of the calculated second time period, the control section controls the writing section so as to change a recording position, in the information recording medium, of at least one of, at least a portion of the first data and at least a portion of the second data, such that the length of the first time period is greater than or equal to the length of the second time period.

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16. A recording and reproduction apparatus according to claim 15, wherein the control section controls the writing section so as to change the recording position of one of the at least a portion of the first data and the at least a portion of the second data, which has a smaller data amount.

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17. A recording and reproduction apparatus according to claim 15, wherein:

the first data includes first audio data and first video data;

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the second data includes second audio data and second video data; and

the control section controls the writing section such

- 97 -

that the first audio data and the second audio data are recorded
on the information recording medium adjacently to each other,
and such that the first video data and the second video data
are recorded on the information recording medium adjacently
5 to each other.

18. A recording and reproduction apparatus according to
claim 1, wherein the information recording medium is an
optical medium.

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19. A recording and reproduction apparatus according to
claim 1, wherein the information recording medium is a
semiconductor memory medium.